Passion for Innovation. Compassion for Patients.™



# **Top Management Presentation**Financial Results of FY2017 Q2 (April 1 – September 30, 2017)

# DAIICHI SANKYO CO., LTD

Sunao Manabe President and COO

**October 31, 2017** 

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# **Agenda**



- FY2017 Q2 Financial Results
- FY2017 Revised Consolidated Forecast
- Major Management Topics
  - Edoxaban (Lixiana)
  - US Pain Business
  - Japan Business
- Shareholder Returns
- R&D Update



#### **FY2017 Q2 Financial Results**

## **Overview of FY2017 Q2 Results**

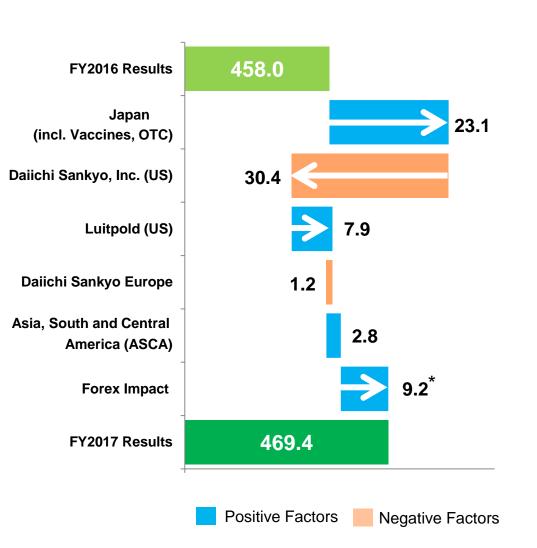


	FY2016 Q2 YTD Results	FY2017 Q2 YTD Results	YoY
Revenue	458.0	469.4	+11.4
Cost of Sales	147.3	157.1	+9.8
SG&A Expenses	141.7	140.0	-1.7
R&D Expenses	95.8	123.6	+27.8
Operating Profit	73.3	48.8	-33.5% <b>-24.5</b>
Profit before Tax	71.9	51.2	-20.7
Profit attributable to owners of the Company	49.0	34.3	-14.7
Currency USD/JPY	105.35	111.07	+5.72
Rate EUR/JPY	118.22	126.29	+8.07

#### Revenue



#### Increased by 11.4 Bn JPY (Increased by 2.2 Bn JPY excl. forex impact)



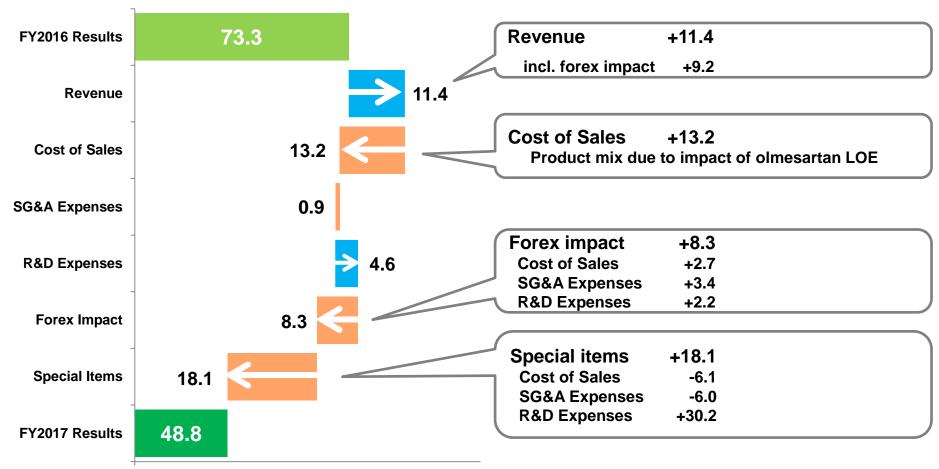
_				
Japan				
Positive:		+8.2 +2.6	Nexium	+2.6
	Daiichi S	ankvo	Espha (GE)	+7.4
		•	6, Olmesarta	
	Rosuvas		-	,
Nonative .	Olmotoo	2.0		
Negative :	Oimetec	-3.0		
Daiichi San	kvo Hea	lthca	re (OTC)	+3.6
		шьа		
Danioni Gan	ikyo i ica	itiicai	(010)	+5.0
				+5.0
Global (exc	l. Forex	Impa	ct)	$\overline{}$
	l. Forex	Impa:	ct) nesartan	-26.9
Global (exc	l. Forex	Impa:	ct)	$\overline{}$
Global (exc Daiichi Sanl	l. Forex	Impa Oli Eff	ct) mesartan ïent	-26.9 -3.2
Global (exc	l. Forex	Impac Oli Eff GE	ct) mesartan Tient	-26.9 -3.2 +4.6
Global (exc Daiichi Sanl	l. Forex	Impac Oli Eff GE	ct) mesartan ïent	-26.9 -3.2
Global (exc Daiichi Sanl Luitpold :	kl. Forex kyo, Inc. :	Impac Oli Eff GE Inj	ct) mesartan Tient Tinjectables ectafer	-26.9 -3.2 +4.6 +4.2
Global (exc Daiichi Sanl	kl. Forex kyo, Inc. :	Impac Oli Eff GE Injo	ct) mesartan Tient Tinjectables ectafer	-26.9 -3.2 +4.6

<sup>\*</sup> Forex impact USD: +5.0, EUR: +2.4, ASCA: +1.8

# **Operating Profit**



# Decreased by 24.5 Bn JPY (Decreased by 7.3 Bn JPY excl. forex impact and special items)



# **Special Items**



(Bn JPY)

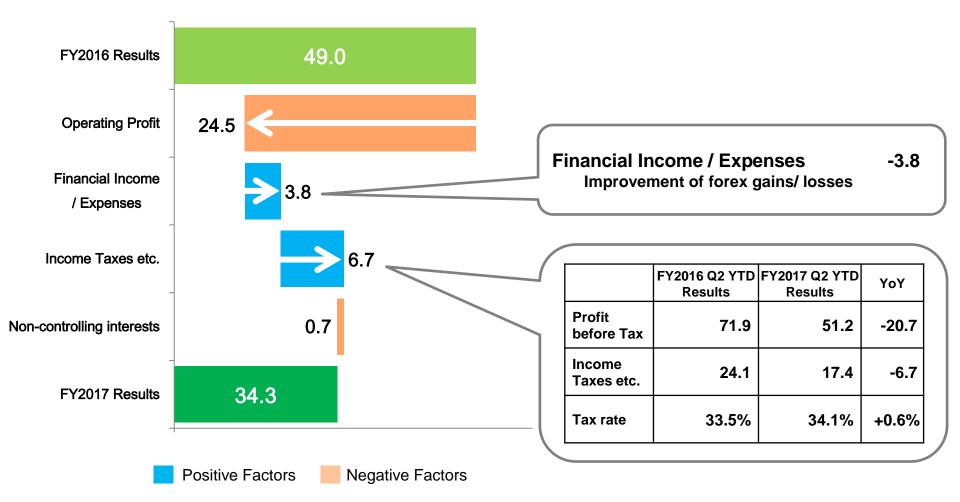
	FY2016 Q2 YTD Results	FY2017 Q2 YTD Results	YoY
Cost of Sales	-	Gain on sales of fixed assets -6.1	-6.1
SG&A Expenses	Restructuring costs in EU +6.0	-	-6.0
R&D Expenses	-	Impairment loss +30.2 (incl. CL-108 +27.8)	+30.2
Total	+6.0	+24.1	+18.1

-: Cost decrease items

#### **Profit Attributable to Owners of the Company**



#### Decreased by 14.7 Bn JPY



## Revenue: Major Business Units (incl. Forex Impact)



				(211011)
	FY2016 Q2 YTD Results	FY2017 Q2 YTD Results	YoY	vs. Forecast (%)
Japan	239.0	257.6	+18.6	48.1%
Daiichi Sankyo Healthcare	32.2	35.8	+3.6	51.9%
Daiichi Sankyo Inc.	70.3	42.0	-28.2	67.8%
Olmesartan	36.7	10.3	-26.3	73.7%
Welchol	19.5	19.7	+0.2	73.0%
Effient	10.8	8.0	-2.8	-
Savaysa	0.9	1.0	+0.1	50.7%
Movantik	1.9	2.5	+0.7	-
Luitpold	41.7	52.4	+10.6	50.8%
Venofer	13.9	14.7	+0.9	52.6%
Injectafer	11.1	16.1	+5.0	48.9%
GE injectables	14.1	19.7	+5.7	-
Daiichi Sankyo Europe	37.0	38.2	+1.3	58.0%
Olmesartan	24.7	18.0	-6.7	69.0%
Efient	4.2	3.9	-0.3	55.3%
Lixiana	3.3	11.0	+7.7	50.1%
ASCA (Asia, South and Central America)	34.0	38.6	+4.6	45.9%
- LICD/IDV	40F 2F	111 07	. 5 70	

Currency	USD/JPY	105.35	111.07	+5.72
Rate	EUR/JPY	118.22	126.29	+8.07

# Revenue: Major Products in Japan



					,
		FY2016 Q2 YTD Results	FY2017 Q2 YTD Results	YoY	vs. Forecast (%)
Nexium	ulcer treatment	42.0	44.7	+2.6	48.6%
Memary	Alzheimer's disease treatment	23.4	24.5	+1.1	45.4%
Olmetec	antihypertensive agent	34.9	31.9	-3.0	67.8%
Lixiana	anticoagulant	11.5	19.7	+8.2	50.4%
Loxonin	anti-inflammatory analgesic	18.8	18.9	+0.1	57.2%
Tenelia	type 2 diabetes mellitus treatment	11.8	13.2	+1.5	44.1%
Pralia	treatment for osteoporosis/ inhibitor of the progression of bone erosion associated with rheumatoid arthritis	8.3	10.9	+2.6	47.2%
Rezaltas	antihypertensive agent	8.8	8.5	-0.3	53.4%
Ranmark	treatment for bone complications caused by bone metastases from tumors	6.8	7.6	+0.8	50.4%
Efient	antiplatelet agent	4.9	6.4	+1.5	49.0%
Inavir	anti-influenza treatment	0.6	1.1	+0.5	8.3%
Cravit	synthetic antibacterial agent	7.3	6.4	-1.0	49.0%
Urief	treatment for dysuria	5.8	5.6	-0.1	51.1%
Omnipaque	contrast medium	7.2	7.1	-0.0	64.7%
Mevalotin	antihyperlipidemic agent	5.5	4.6	-0.8	46.2%



#### **FY2017 Revised Consolidated Forecast**

#### **FY2017 Revised Consolidated Forecast**



(JPY Bn)

	FY2017 Forecast (as of May.)	FY2017 Forecast (as of Oct.)	vs. Forecast (as of May.)	Major factors
Revenue	930.0	930.0	0.0	- Gain on sales of fixed assets -6.1 *booked in Q2
Cost of Sales	340.0	337.0	-3.0	- Increase due to product mix +3.0
SG&A Expenses	300.0	297.0	-3.0 <	Major factors - Efficient execution of
R&D Expenses	190.0	221.0	+31.0	expenses -3.0
Operating Profit	100.0	75.0	-25.0	Major factors - Impairment loss (intangible incl. CL-108)
Profit before Tax	100.0	75.0	-25.0	+30.2 *booked in Q2
Profit attributable to owners of the Company	66.0	50.0	-16.0	

110.54

123.14

110.00

120.00

**USD/JPY** 

**EUR/JPY** 

Currency

Rate

Assumption of currency rate for Q3 and Q4 USD/JPY:110, EUR/JPY:120

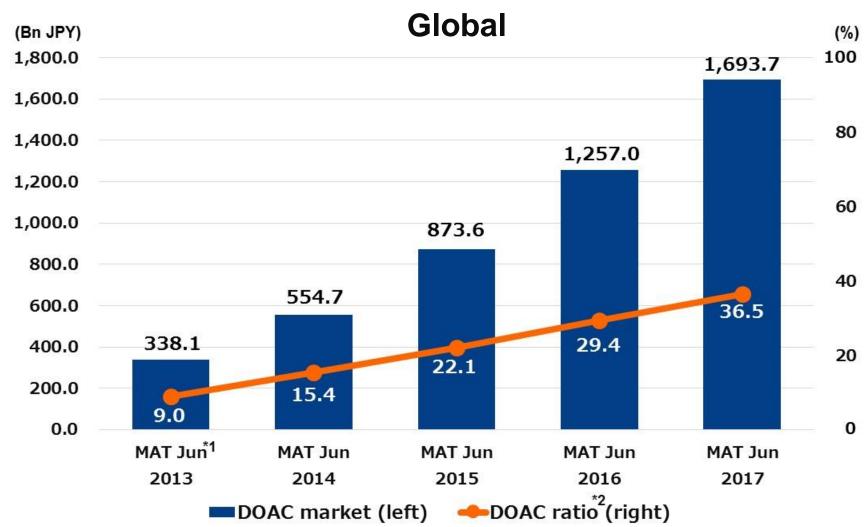


# **Major Management Topics**

- Edoxaban (Lixiana)
- US Pain Business
- Japan Business

# **Direct Oral Anticoagulant (DOAC) Market**





**Currency Rate USD/JPY: 110** 

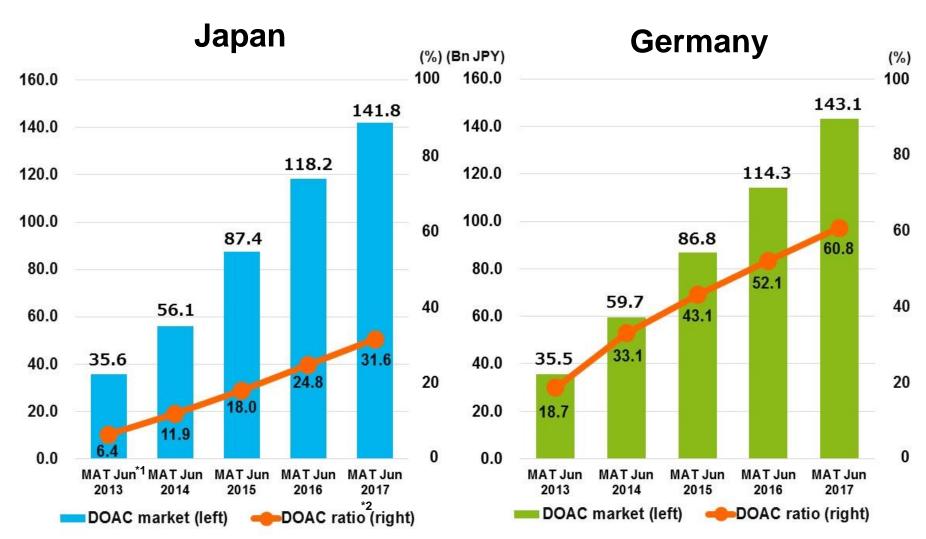
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<sup>\*1:</sup> July 2012 - June 2013

<sup>\*2:</sup> Percentage of DOAC prescription counts to total prescriptions of warfarin and DOAC

### **DOAC Market in Japan and Germany**





**Currency Rate USD/JPY: 110** 

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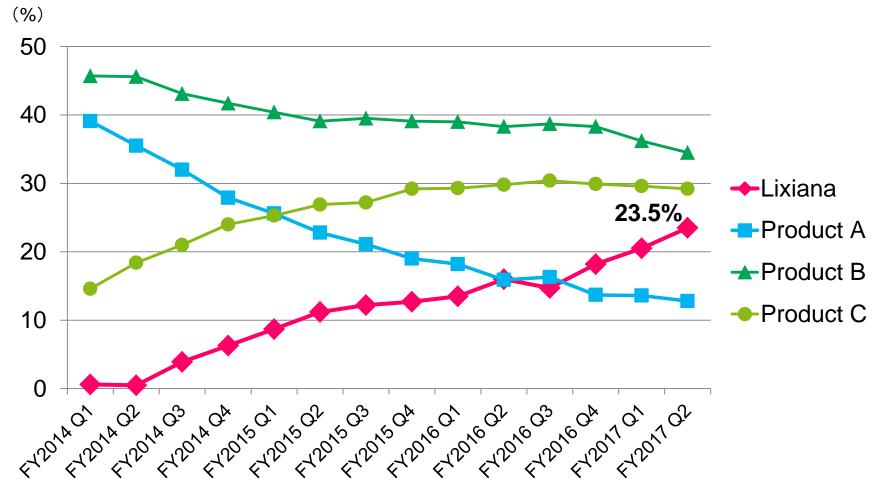
<sup>\*1:</sup> July 2012 - June 2013

<sup>\*2:</sup> Percentage of DOAC prescription counts to total prescriptions of warfarin and DOAC

### **Lixiana: Growth in Japan**



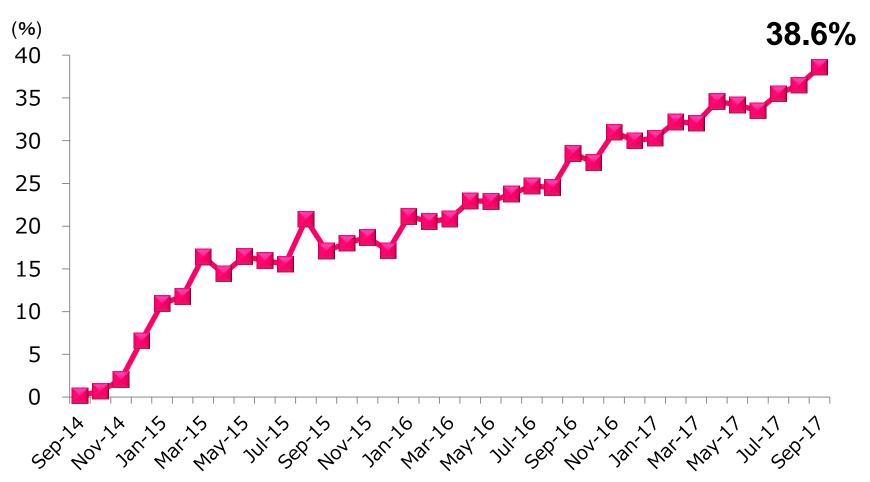
As of FY2017 Q2, Lixiana increased its sales share to 23.5%.



# **Lixiana: Growth in Japan**



Lixiana has reached top Rxs share since Mar. 2017 in prescription number of new patients for AF+VTE. The share expanded to **38.6%** in Sep. 2017.

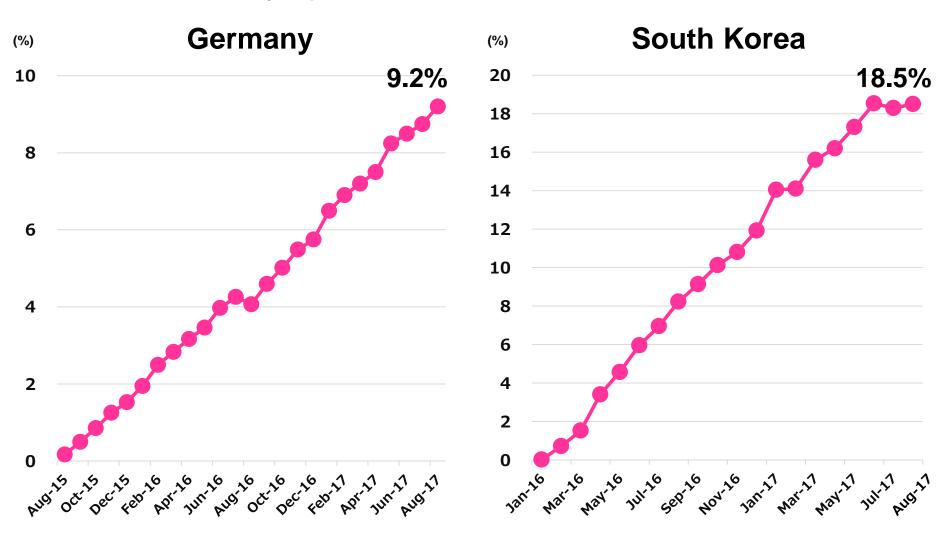


Source: Medi-trend

#### Lixiana: Growth in Germany and South Korea



#### Steady uptake of sales share after launch





# **Major Management Topics**

- Edoxaban (LIXIANA)
- US Pain Business
- Japan Business

# **Changes in US Pain Business**



- CL-108
  - Jan. 2017, received Complete Response Letter from FDA
  - Aug. 2017, decided to return all of rights regarding CL-108 to Charleston Laboratories, Inc.

#### Mirogabalin

In the phase 3 ALDAY clinical trials evaluating mirogabalin for the treatment of pain associated with fibromyalgia, mirogabalin did not meet the primary efficacy endpoint.



We take the complex issues surrounding the US opioid market very seriously. We are committed to marketing our three pain care medicines, Movantik™, MorphaBond™ ER and RoxyBond™, in a responsible manner while responding to patient needs.

#### **DSI: Commitments in Pain Care**



- Daiichi Sankyo recognizes that pain management may require the appropriate use of prescription medicines including controlled substances such as opioids, which may be subject to many safety concerns including diversion, misuse, abuse, addiction, or overdose.
- We are also cognizant of the tragic individual and societal consequences that can result from the improper use of controlled substances.
- Daiichi Sankyo is deeply committed to being part of the solution to prescription drug abuse and we will undertake the marketing and distribution of our pain management products as well as engagement with our customers with a great sense of responsibility and professionalism.
- We have established Commitments in Pain Care a program dedicated to awareness and education around responsible pain management.



# **Three Pain Management Products in US**



- ◆ Expand sales of Movantik™
- Responsibly launch MorphaBond™ ER
- Prepare for launch of RoxyBond™





(oxycodone hydrochloride) immediate release tablets © 5 mg • 15 mg • 30 mg

- Opioid-Induced Constipation (OIC)
- Raised awareness of burden of OIC
- Single-agent, extended release morphine approved by FDA to deter abuse by both the intranasal and intravenous routes of administration
- Launched October 2017
- First and only immediaterelease opioid approved by FDA with approved labeling describing its abuse-deterrent properties (intranasal & intravenous)
- Launch expected 2018
- MorphaBond ER and RoxyBond are formulated with SentryBond<sup>™</sup>, a technology that uses
  multiple overlapping abuse-deterrent barriers to make the tablet more difficult to adulterate for
  misuse and abuse.
- MorphaBond ER and RoxyBond are expected to deter common forms of abuse, intranasal and injection. However, abuse by intranasal, intravenous, and oral routes is still possible.



# **Major Management Topics**

- Edoxaban (Lixiana)
- US Pain Business
- Japan Business

#### VIMPAT: Additional Indication and Lift of Prescription Period Restriction



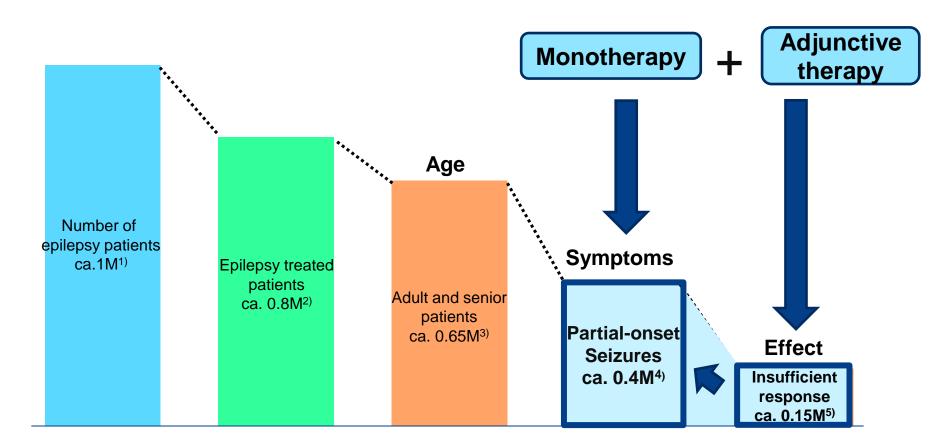
- Aug. 2017, approved as monotherapy\* for partialonset seizure in epilepsy patients
  - \* Conventionally approved and marketed as an adjunctive therapy
- Sep. 2017, lifted restriction on prescription period
- UCB Japan manufacture the product. Daiichi Sankyo distribute/sale VIMPAT with both companies' promotion



#### **VIMPAT: New Options for Epilepsy Medication**



Approval of VIMPAT for monotherapy expand the target patient population



- 1) "Guide book for epilepsy specialists" ISBN: 9784787820341 (Japanese)
- 2) Estimated from external data
- 3) Estimated from patient survey by Ministry of Health, Labor and Welfare
- 4) Estimated from Hauser WA. et al:Epilepsia 34,453-468,1993
- 5) Estimated from Kwan P. et al:N.Engl.J.Med. 342,314-319,2002

#### CANALIA Combination Tablet: Launched in Sep. 2017



- Combination product of Tenelia and Canaglu tablets, two agents for type 2 diabetes mellitus treatments, created by Mitsubishi Tanabe Pharma Corporation
- DPP-4 inhibitor/SGLT2 inhibitor combination drug, first launched in Japan
- Approximately 10% of DPP-4 inhibitors are prescribed in combination with SGLT2 inhibitors
- CANALIA Combination Tablets contributes as a new option for diabetes treatment by benefits such as reduced number of tablets to take and improved compliance of medication
- Marketing by Daiichi Sankyo, and co-promoting with Mitsubishi Tanabe

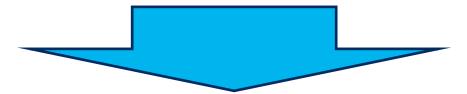


# **Expansion of Product Portfolio in Japan**



#### Achieved the primary endpoint in Phase 3 studies

- Mirogabalin (Japan, Asia)
  - Patients with post-herpetic neuralgia and patients with diabetic peripheral neuropathic pain
  - Evaluated weekly average daily pain score from baseline
- Esaxerenone/CS-3150 (Japan)
  - Patients with essential hypertension\*
  - Evaluated efficacy and safety compared to eplerenone



NDA Submission in FY2017 Q4



## **Shareholder Returns**

#### **Shareholder Returns**



#### **Shareholder Returns Policy during 5YBP\***

- Total return ratio: 100% or more
- Annual ordinary dividend: more than 70 JPY
- Flexible acquisition of own shares

\* 5YBP: 5-year Business Plan (FY2016 - FY2020)

	FY2016 Results	FY2017 Plan	(Target during 5YBP)
Total return ratio	180.7%		100% or more
Dividend	70 JPY	70 JPY	more than 70 JPY
Acquisition of own shares	50.0 Bn JPY	flexible	flexible

#### <Decided to acquire own shares>

- Acquisition period: From Nov. 1, 2017, to Mar. 23, 2018
- Aggregate amount of acquisition cost: 50.0 billion JPY (maximum)
- Total number of shares to be acquired: 28 million shares (maximum)



# **R&D Update**

# Glenn Gormley MD PhD

Senior Executive Officer
Global Head of R&D

# **Agenda**



- R&D Focus and Efficiency
- Oncology Update
  - DS-8201 Update
  - U3-1402 Update
  - New Projects Entered to Clinical Phase
  - New Collaboration in Oncology
- Esaxerenone/CS-3150 Update
- FY2017 Major R&D Milestone Events
- Announcement of R&D Day
- Back-up
  - Pipeline Chart
  - Study Designs of Major Ongoing Clinical Studies
  - Abbreviations



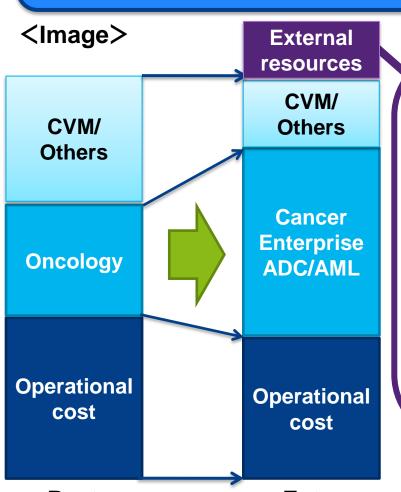
# **R&D Focus and Efficiency**

# **R&D** Focus and Efficiency



34

- Prioritize projects
- Invest selectively to oncology, especially to ADC/AML Franchises
- Accelerate clinical development by focused investment



- Projects which do not align with our strategic focus may be out-licensed to preserve value of the assets
  - DS-5010 (Selective RET Inhibitor)
    - Out-licensed to Boston Pharmaceuticals Inc. global
  - Other possible projects for licensing-out
    - ✓ DS-6051 (NTRK/ROS1 inhibitor) global
    - DS-2969 (Clostridium difficile infection/ GyrB inhibitor) global

Past Future





DS-8201 Update U3-1402 Update

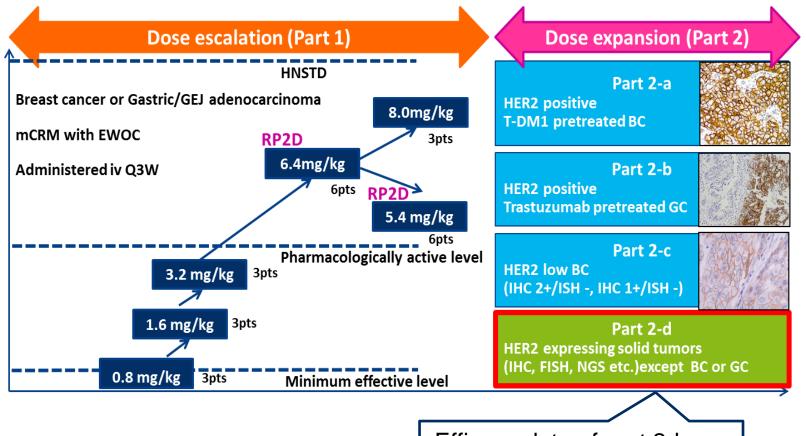


#### **DS-8201: P1 Study Part 2d Result**





 Results of HER2 expressing solid tumors (other than breast cancer and gastric cancer) in the phase 1 study were presented.
 (BC and GC results were presented at ASCO 2017)



Efficacy data of part 2d was presented at ESMO (N=25)



# **DS-8201: P1 Study Part 2d Patient Demographics**

Patient characteristic	Part 2d (N=25)		
Age, median (range)	60.0	(44-72)	
Number of prior regimens, median (range)	3	(0-10)	
Tumor Type	Part 2d (N=25)		
Colorectal	11	(44.0%)	
NSCLC	6	(24.0%)	
Salivary	4	(16.0%)	
Others <sup>†</sup>	4	(16.0%)	

<sup>† 2</sup> Paget's disease, 1 Cholangiocarcinoma, 1 Esophageal cancer



# DS-8201: P1 Study Part 2d Efficacy (6.4mg/kg)

	ORR N (%) ‡	DCR N (%)
Part 2d overall †	7/22 (31.8)	18/22 (81.8)
Colorectal Cancer	2/10 (20.0)	8/10 (80.0)
NSCLC	1/5 (20.0)	3/5 (60.0)
Salivary Cancer	3/4 (75.0)	4/4 (100.0)
Others §	1/3 (33.3)	3/3 (100.0)

<sup>† 3</sup> of 25 patients in 2d were enrolled, but have <2 post-baseline scans and therefore cannot be evaluated for confirmed response.

<sup>&</sup>lt;sup>‡</sup> 1 Colorectal Cancer and 1 Lung Cancer were evaluated once for PR.

<sup>§</sup> Others include Paget's Disease, Cholangiocarcinoma and Esophageal Cancer.

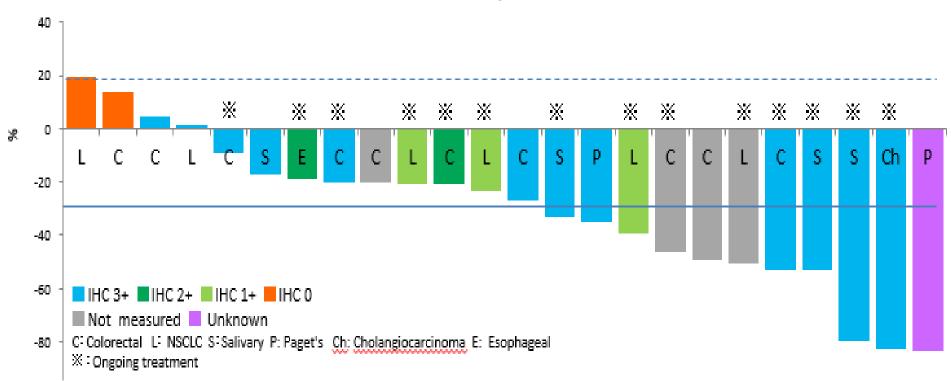


# **DS-8201: P1 Study Part 2d Efficacy**





### Tumor size: Maximum % change from baseline



### Tumor shrinkage was observed in most patients

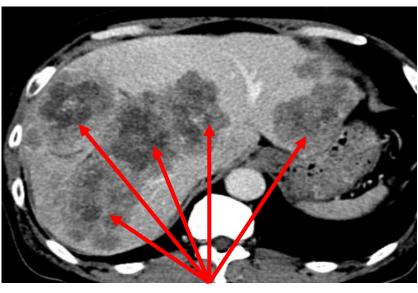


# DS-8201: P1 Study Part 2d CT Imaging





# 59 y/o Male Colorectal cancer with Liver Mets, IHC 3+ (6.4mg/kg)



Liver metastasis

Day 0



Day 175

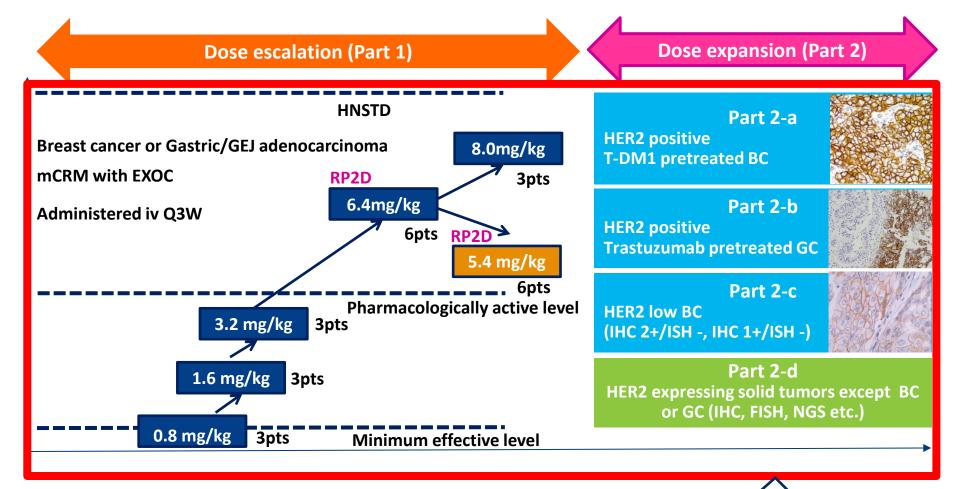
More than 30% tumor shrinkage was observed (PR)



### **DS-8201: Part 1 to Part 2 Safety Profile**







Safety chart in next page covers from part 1 to part 2 (N=168)



### DS-8201: P1 Study Safety – TEAE, any grade, >20%





Preferred Term Part 1 +Part 2 Total (N=168)	Grade 1 (%)	Grade 2 (%)	Grade 3 (%)	Grade 4 (%)	All (%)
Hematologic					
Anemia	3.6	11.9	13.1	1.2	29.8
Platelet count decreased	11.9	7.7	6.5	3.0	29.2
Neutrophil count decreased	1.2	7.7	13.7	2.4	25.0
White blood cell count decreased	1.2	10.1	11.3	1.8	24.4
Gastrointestinal disorder	Gastrointestinal disorders				
Nausea	51.8	13.1	2.4	0.0	67.3
Decreased appetite	34.5	17.9	3.6	0.0	56.0
Vomiting	28.0	4.2	1.2	0.0	33.3
Diarrhea	19.6	4.8	1.2	0.0	25.6
Constipation	20.8	3.0	0.6	0.0	24.4
Others					
Alopecia	20.8	5.4	0.0	0.0	26.2
Malaise	16.7	4.8	0.6	0.0	22.6

No dose-limiting toxicity (DLT) observed. Low incidence of grade 4 adverse events.



# **DS-8201: P1 Study Part 2d Conclusions**

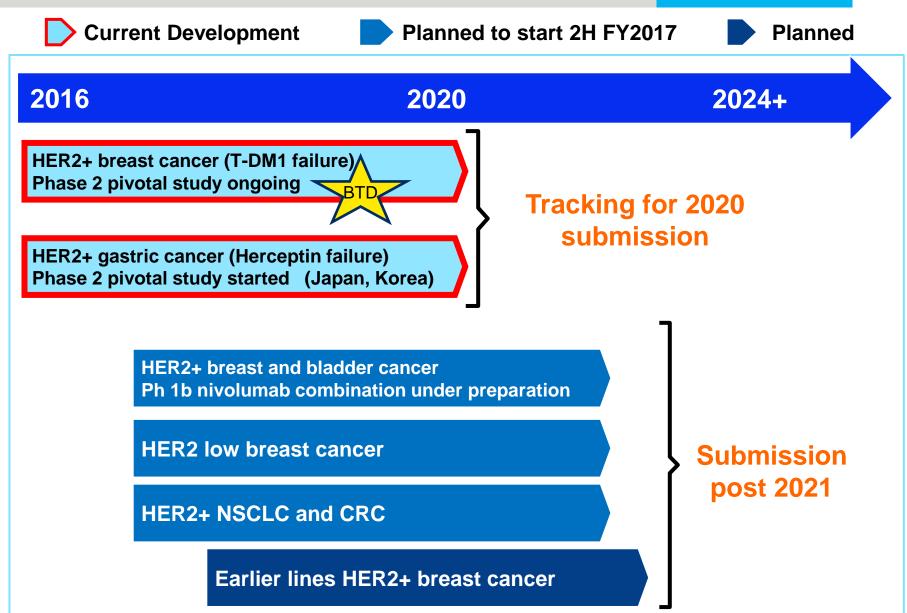


- DS-8201 was well tolerated and MTD was not reached in the dose escalation part.
- Of 22 evaluable patients treated in Part 2d, the ORR was 31.8% and DCR was 81.8%.
- Most of the patients with HER2 expressing solid tumors had tumor shrinkage on treatment and experienced an acceptable safety profile.
- Based on these interim results further investigation of DS-8201 in HER2 expressing solid tumors beyond BC and GC is possible.



# **DS-8201: Development Plan**







# U3-1402: Development Plan



Clinical trial schedule

**FY2017 FY2018** FY2019 Phase 1/2 study **☆TLR** HER3 positive refractory/metastatic breast cancer

### Phase 1 study EGFRm NSCLC

- HER3 positive refractory/metastatic breast cancer Phase 1/2 study
  - Phase 1 study to be presented at conference in FY2018
  - Phase 2 study starts in FY2018 Q1
  - TLR: FY2018 Q4 \*JapicCTI-163401 / NCT02980341
- EGFRm NSCLC Phase 1 study
  - Starts from FY2017 Q3 \*NCT03260491



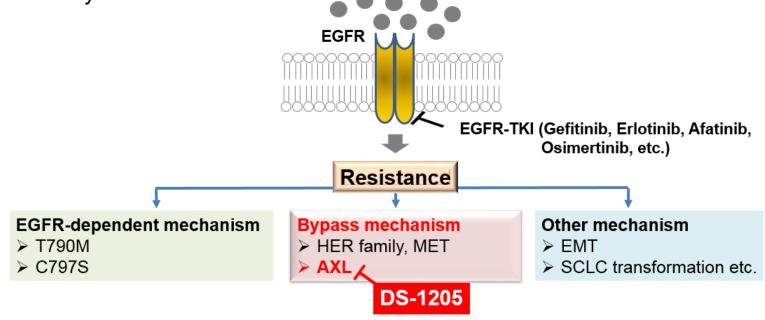
# **New Projects Entered to Clinical Phase**

# **DS-1205: AXL Inhibitor Summary**



- AXL up-regulation is associated with poor prognosis in several cancers
- Up-regulation of AXL is one mechanism of EGFR-TKI resistance in EGFRmutant non-small cell lung cancer

 DS-1205 is an orally available, potent and selective small-molecule inhibitor of the AXL tyrosine kinase.

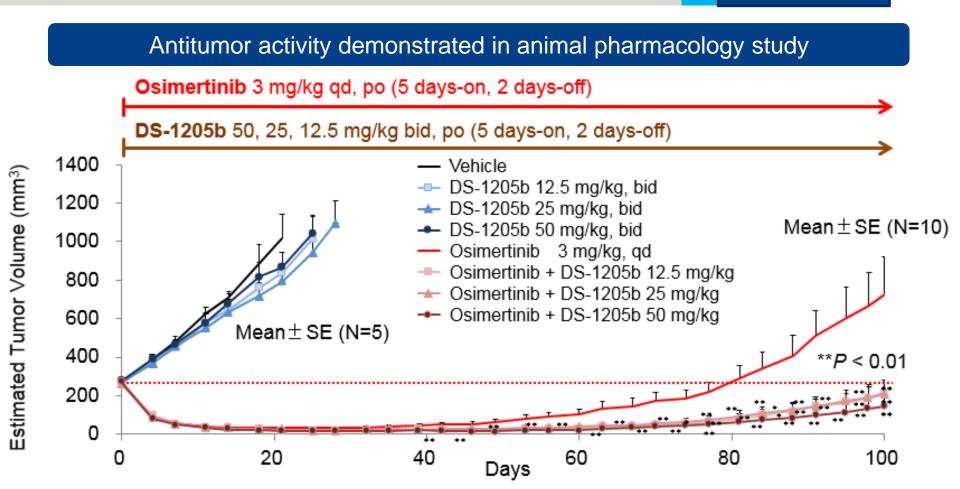


- Pharmacology study result was presented at ESMO 2017 (next page)
- Phase 1 study in combination with osimertinib will start in FY2017 (NCT03255083)

### **DS-1205: Results of Pharmacology Study**







DS-1205 in combination with osimertinib significantly delays resistance in osimertinib acquired-resistance xenograft model



# **New Collaboration in Oncology**

- Glycotope: ADC Franchise

MD Anderson: AML Franchise

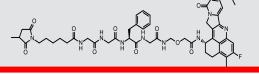


### **Maximize ADC Technology: Collaboration with Glycotope**



# Partnerships to apply our ADC technology to new antibodies and targets

Our proprietary linker and novel payload





PankoMab-GEX® (Glycotope)

- Strategic collaboration to develop an ADC by combining the TA-MUC1 antibody PankoMab-GEX® with our ADC linker-payload
- PankoMab-GEX® is a humanized monoclonal Ab that binds to the tumor specific epitope of mucin 1 (TA-MUC1) which is highly expressed in ovarian, lung and breast cancers



# **Collaboration with MD Anderson Cancer Center**



### MDACC

- > One of the largest integrated academic centers specializing in leukemia
- Ideal partner to help advance Daiichi Sankyo's growing AML portfolio

# Purpose

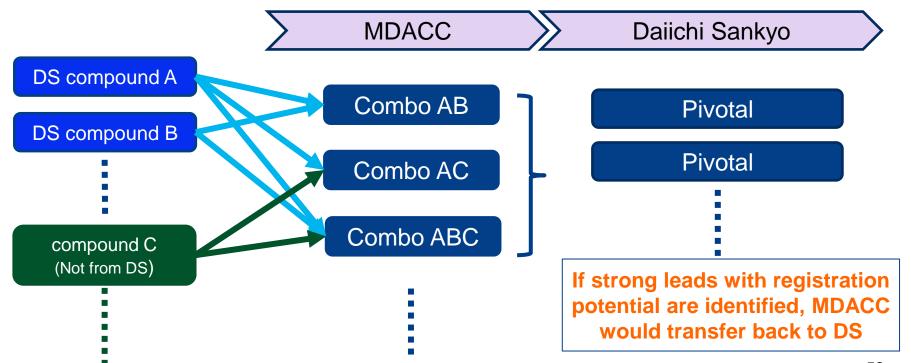
- Accelerate the development of novel therapies for AML
- Conduct numerous non-clinical, phase 1 and 2 clinical trials using several investigational compounds from Daiichi Sankyo and multiple agents from outside Daiichi Sankyo in combination regimens
- Explore novel biomarkers



### **Target DS Compounds and Image of Collaboration**



- Target DS compounds
  - Quizartinib (FLT3-ITD inhibitor)
  - DS-3032 (MDM2 inhibitor)
  - DS-3201 (EZH1/2 inhibitor)
  - PLX51107 (BRD4 inhibitor)





# **Oncology Future Data Disclosure**



Dec. 2017 San Antonio Breast Cancer Symposium



**DS-8201: Breast cancer including HER2 low (Ph1)** 

Dec. 2017 American Society of Hematology (ASH)



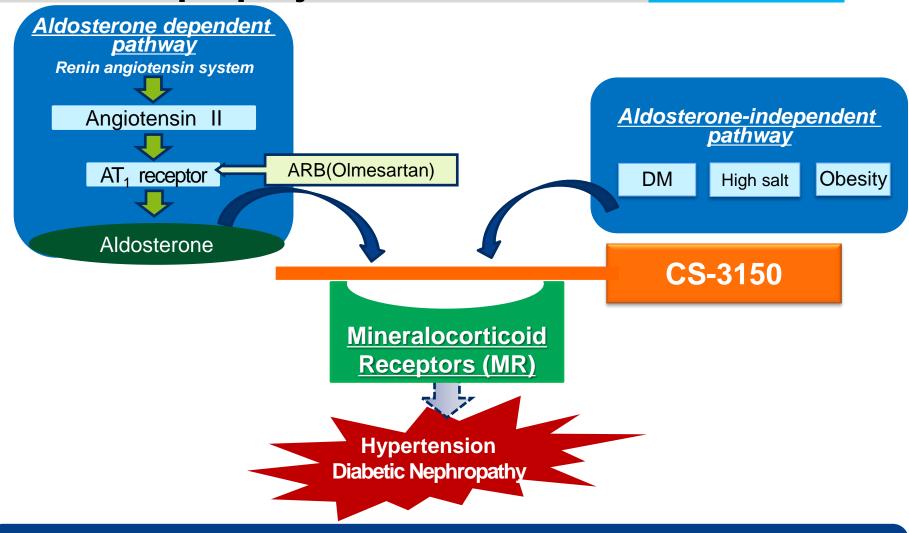
DS-3201: Non-Hodgkin's lymphoma (Ph1)



# Esaxerenone/CS-3150 Update

# Mineralocorticoid Receptor Related Hypertension and Diabetic Nephropathy





**CS-3150** is a non-steroidal Mineralocorticoid Receptor antagonist

# Esaxerenone/CS-3150: P3 Study



- Hypertension
  - Phase 3 pivotal study (ESAX-HTN study)
    - Efficacy and safety compared to eplerenone in patients with essential hypertension was evaluated
    - ✓ Topline Result: achieved primary endpoint
  - NDA submission: FY2017 Q4
- Diabetic nephropathy (DN)
  - Started phase 3 pivotal study (ESAX-DN Study)
  - Only 1 ARB and 1 ACE inhibitor are available for hypertension patient with DN and unmet medical need is still high

\*JapicCTI-173695

# FY2017 Major R&D Milestone Events (1)



Project	Indication/Study	Q1	Q2	Q3	Q4	FY18-Q1 ~
Pexidartinib	Tenosynovial giant cell tumor Phase 3 study (US/EU)			⇒ <u>TLR</u>		Submission
Quizartinib	QuANTUM-R AML 2nd line treatment Phase 3 study (US/EU/Asia)	<u>Interim</u> <u>Analysis</u>				TLR
	HER2-positive Breast Cancer (T-DM1 resistance or refractory) Pivotal phase 2 study (JP/US/EU)		BTD Study initiation			
DS-8201	HER2-positive Gastric Cancer (Herceptin		Study initiation			
	HER2-positive refractory/metastatic breast cancer and urothelial (bladder) cancer Phase 1b nivolumab combination study (US/EU)				Study initiation	
U3-1402	HER3 positive refractory/metastatic breast cancer Phase 1/2 study (JP)					P2 part start
EGFRm NSCLC Phase 1 study (US)				Study initiation		
DS-1205	EGFRm NSCLC Phase 1 osimertinib combination study (US)  Study initiation		•			
PLX2853	Advanced refractory solid tumor and non-Hodgkin's lymphoma Phase 1/2 study (US)		Study initiation			

TLR: Top Line Results

BTD: Breakthrough Therapy Designation

# FY2017 Major R&D Milestone Events (2)



Project	Indication/Study	Q1	Q2	Q3	Q4	FY18-Q1 ~
	Fibromyalgia Phase 3 study (US/EU)	<u>TLR</u>				
Mirogabalin	PHN Phase 3 study (JP/Asia)	<u>TLR</u>			Culturianian	
	DPNP Phase 3 study (JP/Asia)		<u>TLR</u>		Submission	
Esaxerenone	Hypertension Phase 3 study (JP)		<u>TLR</u>		Submission	
/CS-3150	Diabetic nephropathy Phase 3 study (JP)		Study initiation			
DS-5141	Duchenne Muscular Dystrophy Phase 1/2 study (JP)	SAKIGA KE			TLR	

Red: new or update Underline: achieved TLR: Top Line Results 58

# **DS R&D Day 2017**



- Date: December 13, 2017 (15:30 17:30)
- Location: Daiichi Sankyo Headquarter Office
- Presenters:
  - Dr. Glenn Gormley
    - Sr. Executive Officer, Global R&D Head
  - Dr. Antoine Yver
    - ✓ Global Head of Oncology R&D, Head of Cancer Enterprise

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# **Appendix**

- Pipeline chart
- Study designs of major clinical studies
- Abbreviations

# **Major R&D Pipeline**

(NTRK/ROS1 inhibitor)

As of October 2017

(CS-8958 / Anti-influenza /out-licensing with Biota)



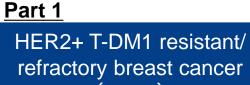
Therapeutic area	Phase 1	Phase 2	Phase 3	Application
Oncology	■ DS-3032 (US/JP)  (MDM2 inhibitor)  ■ PLX7486 (US) (FMS / TRK inhibitor)  ■ PLX8394 (US) (BRAF inhibitor)  ■ PLX9486 (US) (KIT inhibitor)  ■ DS-1123 (JP) (Anti-FGFR2 antibody)  ■ U3-1402 (JP) (Anti-HER3 ADC)  ■ DS-1001 (JP) (IDH1m inhibitor)  ■ DS-3201 (JP/US) (EZH1/2 inhibitor)  ■ PLX73086 (US) (CSF-1R inhibitor)  ■ PLX2853 (US) (BRD4 inhibitor)	Patritumab (EU) (U3-1287 / Anti-HER3 antibody)  Pexidartinib (US) (PLX3397 / Glioblastoma / CSF-1R/ KIT/FLT3-ITD inhibitor)  DS-1647 (JP) (Glioblastoma / G47Δ virus)  Quizartinib (JP) (AC220 / AML-2 <sup>nd</sup> / FLT3-ITD inhibitor)  DS-8201 (US/EU/JP) (Breast cancer/anti-HER2 ADC)  DS-8201 (JP/Asia) (Gastric cancer/anti-HER2 ADC)	■ Denosumab (JP) (AMG 162 / Breast cancer adjuvant/ Anti-RANKL antibody) ■ Nimotuzumab (JP) (DE-766 / Gastric cancer / Anti- EGFR antibody) ■ Quizartinib (US/EU/Asia) (AC220 / AML-2nd / FLT3-ITD inhibitor) ■ Quizartinib (US/EU/Asia) (AC220 / AML-1nt / FLT3-ITD inhibitor) ■ Pexidartinib (US/EU) (PLX3397 / TGCT / CSF- 1R/KIT/FLT3-ITD inhibitor)	
Cardiovascular- Metabolic	<ul> <li>DS-1040 (US/EU/JP)         (Acute ischemic stroke / TAFIa inhibitor)</li> <li>DS-2330         (Hyperphosphatemia)</li> <li>DS-9231/TS23         (Thrombosis / α2-PI inactivating antibody)</li> </ul>		Edoxaban (JP) (DU-176b / AF / FXa inhibitor)  Prasugrel (JP) (CS-747 / Ischemic stroke / Antiplatelet agent)  Esaxerenone (JP) (CS-3150/Hypertension/ MR antagonist)  Esaxerenone (JP) (CS-3150 / DM nephropathy / MR antagonist)	■ Edoxaban (ASCA etc.) (DU-176b / AF / FXa inhibitor) ■ Edoxaban (ASCA etc.) (DU-176b / VTE / FXa inhibitor)
Others	■ DS-1971 (Chronic pain) ■ DS-1501 (US) (Osteoporosis / Anti-Siglec-15 antibody) ■ DS-7080 (US) (AMD / Angiogenesis inhibitor) ■ DS-5141 (JP) (DMD / ENA oligonucleotide) ■ VN-0102/JVC-001 (JP) (MMR vaccine) ■ DS-1211 (US) (TNAP inhibitor)		Mirogabalin (US/EU) (DS-5565 / FM / α2δ ligand)  Mirogabalin (JP/Asia) (DS-5565 / DPNP/ α2δ ligand)  Mirogabalin (JP/Asia) (DS-5565 / PHN / α2δ ligand)  VN-0105 (JP) (DPT-IPV / Hib vaccine)  Laninamivir (JP) (CS-8958 / Anti-influenza / nebulizer)	Hydromorphone (JP) (DS-7113 / Cancer pain / Opioid μ- receptor agonist) <injection> Intradermal Seasonal Influenza Vaccine (JP) (VN-100 / prefilled i.d. vaccine for seasonal flu)  VN-0107/MEDI3250 (JP) (Nasal spray flu vaccine)</injection>
Out-licensing	DS-6051	■ DS-2969	Laninamiy	vir (US/EU)

62 Red: new or update

(Clostridium difficile infection/GyrB inhibitor)

### **DS-8201: HER2 Positive Breast Cancer Pivotal P2 Study** (JP/US/EU)





(N=60)

HER2+ T-DM1 resistant/ refractory breast cancer (N=60)

5.4mg/kg

6.4mg/kg

7.4mg/kg

Recommended dose from above -1

Recommended dose from above -2

Evaluate PK and select 2 doses

Determine recommended dose

#### Part 2

HER2+ T-DM1 resistant/ refractory breast cancer (N=100)

HER2+ T-DM1 intolerant\* breast cancer (N=10)

Recommended dose from part 1

Evaluate efficacy and safety

T-DM1 intolerant: patient who could not continue T-DM1 due to adverse events

Study patients	<ul> <li>HER2 positive patients with T-DM1 resistant/refractory</li> <li>HER2 positive patients with T-DM1 intolerant</li> </ul>	
Estimated enrollment	230 patients	
Primary endpoint	ORR	
Secondary endpoint	DOR, DCR, PFS, OS etc.	
JAPIC/CT.gov	JapicCTI-173693 / NCT03248492	63

# DS-8201: HER2 Positive Gastric Cancer Pivotal P2 Study (JP/Asia)



#### **Pivotal cohort**

HER2 positive gastric or gastroesophageal junction adenocarcinoma

Irinotecan or paclitaxel\*

Evaluate efficacy and safety

**Exploratory cohort** 

HER2 low expressing gastric or gastroesophageal junction adenocarcinoma

\* Doctor's choice treatment

DS-8201 Eva

Evaluate efficacy and safety

Study patients	<ul> <li>HER2 positive gastric or gastroesophageal junction adenocarcinoma</li> <li>HER2 low expressing gastric or gastroesophageal junction adenocarcinoma</li> </ul>	
Estimated enrollment	220 patients	
Primary endpoint	ORR	
Secondary endpoint	DOR, DCR, PFS, OS, etc.	
JAPIC/CT.gov	JapicCTI-173727/ TBD	

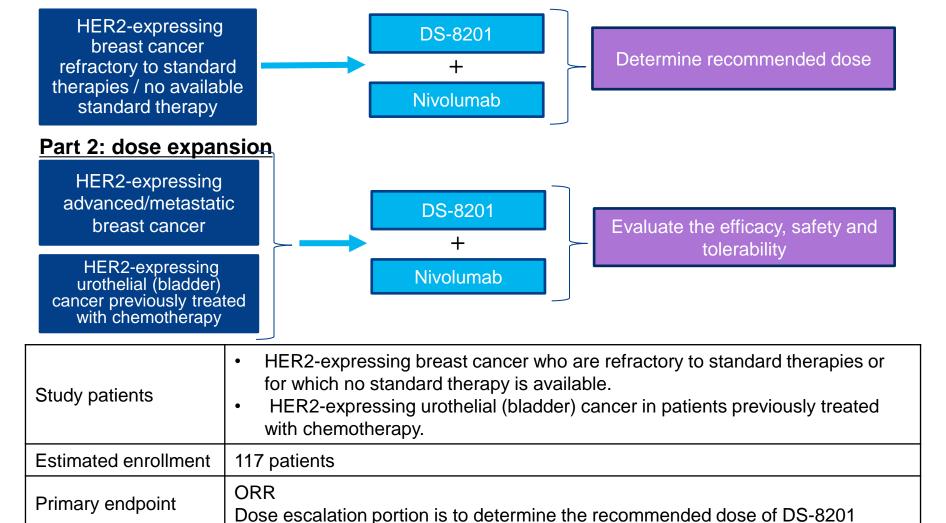
### **DS-8201: P1b Nivolumab Combination Study (US/EU)**



#### Part 1: dose escalation

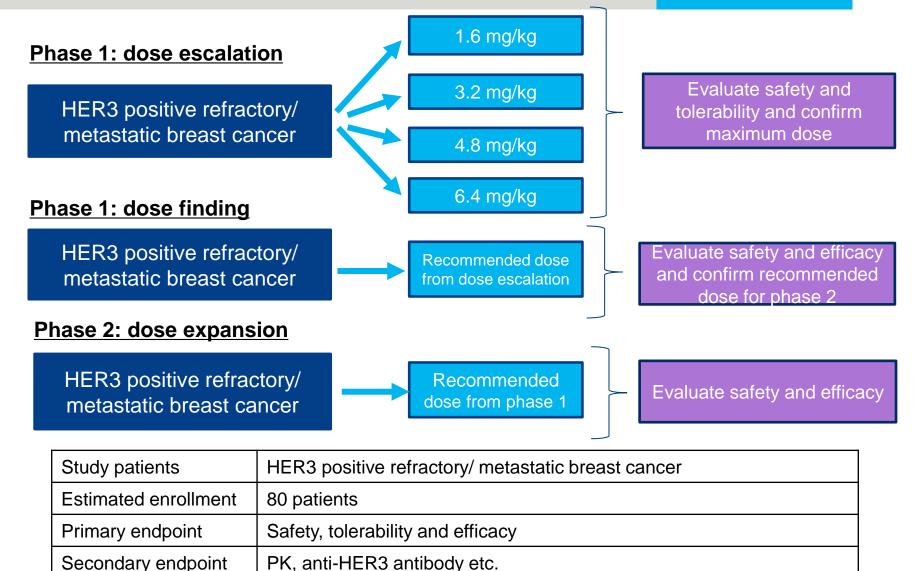
**TBD** 

JAPIC/CT.gov



### U3-1402: HER3 Positive Breast Cancer P1/2 Study (JP)



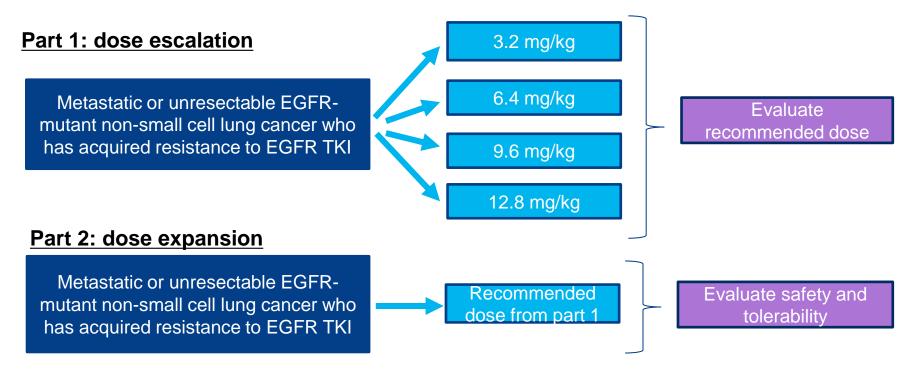


JapicCTI-163401 / NCT02980341

JAPIC/CT.gov

# U3-1402: EGFRm NSCLC P1 Study (US)

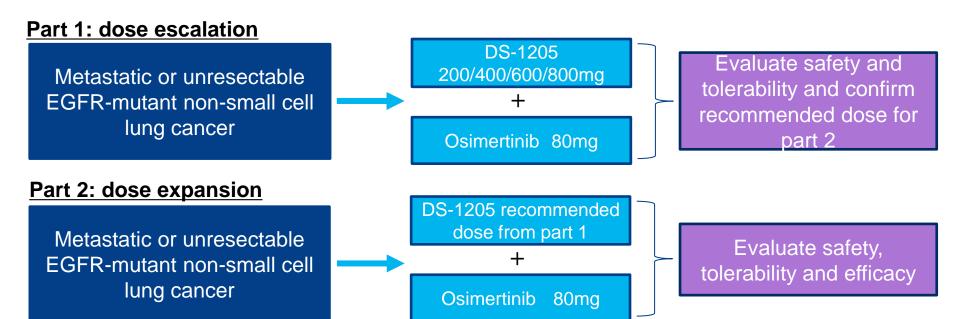




Study patients	Metastatic or unresectable EGFR-mutant non-small cell lung cancer with acquired resistance to EGFR TKI
Estimated enrollment	63 patients
Primary endpoint	Safety, tolerability
Secondary endpoint	ORR, DCR, PFS, OS etc.
JAPIC/CT.gov	TBD / NCT03260491

### **DS-1205: FIH P1 Osimertinib Combination Study (US)**

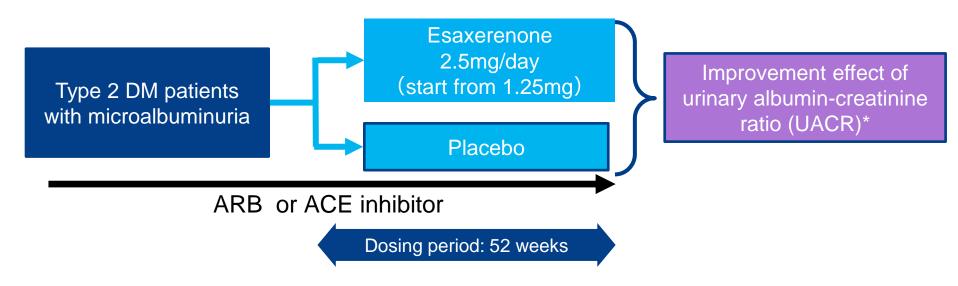




Study patients	Metastatic or unresectable epidermal growth factor receptor (EGFR)-mutant non- small cell lung cancer
Estimated enrollment	118 patients
Primary endpoint	DLT, safety
Secondary endpoint	PK, ORR, DOR, DCR, PFS, OS etc.
JAPIC/CT.gov	NA / NCT03255083

### CS-3150: Diabetic Nephropathy P3 Study (ESAX-DN Study) (JP)





Study patients	Type 2 DM patients with microalbuminuria (stage 2 nephropathy)
Estimated enrollment	400 patients (200 patients/arm)
Primary endpoint	Remission achievement rate of UACR at the end of investigational drug administration*
Secondary endpoint	Change rate in UACR and eGFR from baseline to the end of the treatment etc.
JAPIC/CT.gov	JapicCTI-173695 / TBD

<sup>\*:</sup> UACR reached to normal level (<30 mg/gCr) and 30% reduction from baseline

# **Abbreviations**



Abbreviation	
BTD	Breakthrough designation
CR	Complete response
DCR	Disease control rate
DLT	Dose limiting toxicity
DOR	Duration of response
EGFR	Epidermal growth factor receptor
MTD	Maximum tolerated dose
NSCLC	Non-small-cell lung cancer
ORR	Overall response rate Objective response rate
OS	Overall survival
PD	Progress disease
PFS	Progression-free survival
PR	Partial response